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TITLE: Toddler Temperament Modestly Predicts Middle Childhood Mental Health Profiles, via Genetic Pathways

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ABSTRACT:

Temperament provides a promising avenue for understanding psychopathology risk early in life, yet most studies only examine temperament links to single disorders. We pursue a more comprehensive approach by examining how broad temperament factors during toddlerhood, when symptoms are ambiguous, predict empirically derived classes of psychopathology symptoms in middle childhood, when diagnosis becomes common.

Latent class analysis of symptoms at age 7 yielded 9 classes for each gender in a birth record-based twin sample [Vendlinski, MK, Javaras, KN, Van Hulle, CA, Lemery-Chalfant, K., Maier, R., Davidson, RJ, & Goldsmith, HH (2014). Relative Influence of Genetics and Shared Environment on Child Mental Health Symptoms Depends on Comorbidity. *PLoS ONE*, 9(7)]. Relative to extant categories, classes revealed pervasive symptom overlap and co-morbidity. Using parent report on the Toddler Behavior Assessment Questionnaire with 1,037 toddlers, a linear mixed effects model with nesting within families showed the temperament factors were generally modestly but highly significantly associated with symptom classes. The low interest/attention and high negative affect/low control temperament factors predicted membership in more impaired/severe classes, which contained both internalizing and externalizing symptoms. Lower temperamental fear in toddlerhood predicted classes with moderate impulsivity. And, high interest/atten-

tion and low negative affect/high control both predicted low and mild symptoms classes. Thus, toddler temperament factors were weak, non-specific risk factors—and in some cases, protective factors—for childhood mental health symptoms. These phenotypic associations are followed up with bivariate genetic analyses, initial results of which implicate primarily genetic mediation for the strongest longitudinal phenotypic associations.

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